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16. The dispersion of Claim 15 wherein the diol having a molecular weight of from about 1,000 to about 4,000 is a polyoxypropylene diol with an ethylene oxide capping of from 0 to 25 percent.

### REMARKS

**Claims in Application.** Claims 3, 4, 10, 15 and 16 have been amended. Claims 1-18 are active in this application. Reconsideration is respectfully requested.

**Scope of Claims of Applicant.** Applicants' claims are directed to novel polyurethane films and a method of making the same and an aqueous polyurethane dispersion useful for preparing the polyurethane film. The dispersions are made by first preparing the non-ionic prepolymer. Water and an anionic surfactant are then added to the prepolymer, all in the substantial absence of water, thereby rendering the polyurethane dispersion. The polyurethane dispersions produced by the claimed process exhibit properties similar to natural rubber latexes without the inclusion of dermal irritants and solvents.

**Examiner's Rejection of Claims Under 35 U.S.C. § 102(b).** The Examiner has rejected Claims 1, 2, 9, 11, 13 and 14 under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 4,380,596 ("*Watchko*"). This ground for rejection is traversed.

*Watchko* discloses resinous systems useful as primers for polycarbonates, commonly used in automotive bumpers. Such resinous coatings allegedly do not exhibit the degradative effects from organic solvents. The composition contains a carbon containing pigment to impart electrostatic properties. Also included in the composition is an aqueous polyurethane and an anionic surfactant.

*Watchko* does not anticipate any of Claims 1, 2, 9, 11, 13 and 14. As set forth in Example 1 and lines 34-45 of column 2, of *Watchko*, *the surfactant is added to a portion of the aqueous polyurethane dispersion*. After being ballmilled with carbon black for 24 hours, the material is then drained and silicon dioxide is then added to it along with additional aqueous polyurethane. In the claims of Applicants, *the aqueous dispersion of the prepolymer is formed in the presence of the anionic surfactant*.

**Examiner's Rejection of Claims Under 35 U.S.C. § 103(a).** The Examiner has further rejected Claims 1-18 under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 4,380,596 ("*Markusch*") or U.S. Patent No. 5,043,381 ("*Coogan*") each in view of "*Watchko*". This ground for rejection is also likewise traversed. Reconsideration is therefore requested.

*Markusch*, like *Watchko*, discloses a polyurethane dispersion to which may be added an emulsifier. The Examiner relies upon lines 17-20 of column 13 of *Markusch* for support of his rejection. However, this passage is directed to dispersions which are *blended* with an emulsifier. *Markusch* does not disclose the formation of a dispersion of a polyurethane prepolymer in the presence of an anionic surfactant.

*Coogan* discloses a non-ionic polyurethane dispersion which may contain a surfactant. However, the surfactant in *Coogan* is not introduced to the prepolymer while the polyurethane dispersion is prepared. Note lines 42-63 of column 6 which merely states that "surfactants" can be introduced to the aqueous dispersion. None of the 16 examples of *Coogan* disclose the addition of an anionic surfactant to the prepolymer while the prepolymer dispersion is formed.

Since neither *Markusch* or *Coogan* disclose a polyurethane dispersion prepared by introducing an anionic surfactant to the prepolymer during the formation of the dispersion, the rejection of the claims over *Markusch* or *Coogan* in view of *Watchko* should be withdrawn.

**Examiner's Rejection of Claims 1-18 Under Second Paragraph of 35 U.S.C. § 112.** The Examiner has further rejected Claims 1-18 under the second paragraph of 35 U.S.C. 112. This ground for rejection is traversed.

The second paragraph requires that the specification conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which Applicant regards as his invention. The purpose of the second paragraph is to ensure that those skilled in the art can determine with precision the metes and bounds of the claims. According to the Federal Circuit, the issue of indefiniteness must be focused on whether those skilled in the art would understand the scope of the claim when the claim is read in light of the rest of the specification. *Orthokinetics, Inc. v. Safety Travel Chairs, Inc.*, 806 F.2d 1565, 1565, 1 USPQ2d 1081, 1088 (Fed. Cir. 1986). In its discussion of the prior art, Applicants clearly indicate the desirability of the process to occur in the absence of an organic solvent. Further, the examples of Applicants provide a guideline to the claimed terminology.

The facts in the instant case are most similar to those in *In re Marosi*, 710 F.2d 799, 803, 218 USPQ 289, 292 (Fed. Cir. 1983) wherein the Federal Circuit held that a claim element specifying a compound to be "essentially free of alkali metal" was not indefinite. In *Masrosi*, the Court stated:

Appellants have provided a general guideline and examples sufficient to enable a person of ordinary skill in the art to determine whether a process uses a silicon

dioxide source “essentially free of alkali metal”. . . We are persuaded that such a person would draw the line between unavoidable impurities in starting materials and essential ingredients.

The Court in *Marosi* indicated that the issue of indefiniteness should be resolved only after examining the objectionable phrase in light of the specification. Deciding indefiniteness solely on usage of the term in the claim is improper. When examined in light of the specification, it is clear that the claimed phrase “substantial absence of an organic solvent” is not indefinite. As in *Marosi*, a person of ordinary skill in the art would readily recognize from the specification that the process most desirably does not proceed in the presence of an organic solvent, but if it did, only very small amounts would be used.

Use of the term “substantially” to describe a quantity is widely accepted by the courts. In *Andrew Corp. v. Gabriel Electronics, Inc.*, 847 F.2d 819, 821, 6 USPQ2d 2010, 2012 (Fed. Cir. 1988), *cert. denied*, 488 U.S. 927 (1988), the Court held that the term “substantially equal” was not indefinite under 35 U.S.C. § 112. The Court stated “substantially” to be:

ubiquitous in patent claims. Such usages, when serving reasonably to describe the claimed subject matter to those of skill in the art of the invention, and to distinguish the claimed subject matter from the prior art, have been accepted in patent examination and upheld by the courts.

Also, see *C.E. Equipment Co. Inc. v. United States*, 13 USPQ2d 1363, 1368 (Cl. Ct. 1989) (“the term ‘substantially’ in patent claims gives rise to some definitional leeway. . . . Patentees may use these terms to avoid unduly limited the modified word. Thus, the term ‘substantially may prevent avoidance of infringement by minor changes that do no affect the results sought and accomplished.”) See also *In re Mattison*, 509 F.2d 563, 565, 184 USPQ 484, 486 (CCPA 1975)

(limitation "to substantially increase the efficiency of the compound as a copper extractant" is not indefinite).

**Rejection of Claims 3-4, 7, 10, 15-16 and 18 Under Second Paragraph of 35 U.S.C. § 112.**

The Examiner has further rejected Claims 3-4, 7, 10, 15-16 and 18 under the second paragraph of 35 U.S.C. § 112. Applicants have amended Claims 3, 4, 10, 15 and 16. Such amendments renders unnecessary further discussion of this rejection. Applicant traverses the rejection of Claims 7 and 18.

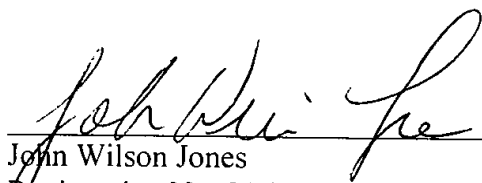
The Examiner states that Applicant, in claims 7 and 18, has "failed to specify the basis for the weight percents." Applicants disagree. Claims 7 and 18 state that the "dispersion has a solids content of from 5 to 60 weight percent." Thus, 5 to 60 percent of the total weight of the dispersion is solids. Applicants do not understand the basis of the Examiner's rejection and therefore request the Examiner to withdraw the rejection on Claims 7 and 18.

**CONCLUSIONS**

In view of the foregoing amendments and remarks, Applicant respectfully requests the Examiner to promptly issue a Notice of Allowance. The Examiner is invited to telephone the undersigned should it be deemed prudent to expedite examination of this application.

Respectfully submitted,

Dated: May 29, 2002

  
John Wilson Jones  
Registration No. 31,380

**VERSION TO SHOW CHANGES MADE**

3. The polyurethane film according to Claim 1, wherein the active hydrogen containing material is either:

- (a) a mixture of a diol having a high molecular weight of from about 1,000 to about 4,000 ~~diol~~ and a diol having a low molecular weight of from about 60 to about 750 ~~diol~~; or
- (b) a diol having a high molecular weight of from about 1,000 to about 4,000 ~~diol~~, wherein, when the active hydrogen containing material does not include a diol having a low molecular weight of from about 60 to about 750 ~~diol~~, the prepolymer is dispersed in water which includes a difunctional amine chain extender.

4. The polyurethane film according to Claim 3 wherein the diol having a high molecular weight of from about 1,000 to about 4,000 ~~diol is a high molecular weight of from about 1,000 to about 4,000~~ is a polyoxypropylene diol having an ethylene oxide capping of from 0 to 25 percent.

10. The process according to Claim 9, wherein the diisocyanate is either:

- (a) an aliphatic diisocyanate; or
- (b) an aromatic diisocyanate selected from the group consisting of MDI, TDI, and mixtures thereof; and

the active hydrogen containing material is either:

- (a) a mixture of a diol having a high molecular weight of from about 1,000 to about 4,000 ~~diol~~ and a diol having a low molecular weight of from about 60 to about 750 ~~diol~~; or
- (b) a diol having a high molecular weight of from about 1,000 to about 4,000 ~~diol~~

wherein, when the active hydrogen containing material does not include a diol having a low molecular weight of from about 60 to about 750 ~~diol~~, the prepolymer

is dispersed in water which includes a difunctional amine chain extender.

15. The dispersion of Claim 13, wherein the mixture of diols is a mixture of a diol having a high molecular weight of from about 1,000 to about 4,000 ~~diol~~ and a diol having a low molecular weight of from about 60 to about 750 ~~diol~~.

16. The dispersion of Claim 15 wherein the diol having a high molecular weight of from about 1,000 to about 4,000 ~~diol~~ is a polyoxypropylene diol with an ethylene oxide capping of from 0 to 25 percent.